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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,320	07/31/2003	Charles Edward Bowers	30-4397DIV2	1906

7590 07/28/2005

Honeywell International Inc.  
15801 Woods Edge Road  
Colonial Heights, VA 23834

EXAMINER

YAO, SAMCHUAN CUA

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/631,320	<b>Applicant(s)</b> BOWERS, CHARLES EDWARD	
	<b>Examiner</b> Sam Chuan C. Yao	<b>Art Unit</b> 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 29-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 29 is rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/14408 A1.

WO '408 discloses a process of making a yarn with a thermally activating binder material, the process comprises providing a continuous bundle of synthetic or natural base fibers; providing a wrapper yarn comprising a blend of heat-activated binder fibers and non-adhesive fibers; ring or wrap spinning the bundle of synthetic base fibers and the wrapper yarn to form a blended yarn; sufficiently heating the blended yarn to melt the binder fibers; and, then cooling the heat-treated yarn to solidify the heat-activated binder fibers (page 6; examples 3-4; see page 3 lines 21-31 and claim 16 for heat-treating/heat-setting a "*wrapped singles yarn*"). See example 1 on page 6 for the melting temperature range for base fibers and binder fibers; and on page 4 lines 19-21 and page 6 12-14 for a dyeing and finishing step.

While not explicitly stated, the WO '408 patent as a whole would have reasonably suggested to one in the art that, although it is desired to use a twist heat-treated yarn as a carpet face yarn, such is not necessary as evidence from passages on

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page 3 lines 10-31, claims 1, 14-15 and 16. In other words, one in the art reading the WO '408 would have reasonably recognized and appreciated that, twist-free heat-treated yarn of WO '408 can effectively be used as a carpet face yarn. For this reason, this claim is taken to be anticipated by WO '408.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 29-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/14408 A1 in view of JP 2300340 A.

Note: claim 29 is taken to be anticipated by WO '408. This alternative rejection is made in the event that a clear and convincing evidence is provided showing that WO '408 does not contemplate an unplied heat-treated yarn for forming a face yarn of a carpet.

The discussion of the WO '408 patent set forth in numbered paragraph 2 is above incorporated herein.

While WO '408 teaches manufacturing a heat-treated plied free yarn for tufting or a carpet face yarn (claims 1, 15 and 16), WO '408 does not explicitly disclose directly incorporating the heat-treated yarn into a carpet primary backing as loops. In any event, it would have been obvious in the art to directly incorporate a resultant heat-treated yarn (i.e. without forming a plied yarn) into a carpet primary

backing as loops, because it is well known/conventional to directly incorporate a heat-treated or twist-free yarn into a carpet primary backing as loops as exemplified in the teachings of JP '340 (abstract; figures 1-3 and 5). A preference on whether to use plied heat-treated singles yarn or heat-treated singles yarn is taken to be well with in the purview of choice in the art, absent any showing of unexpected result.

With respect to claims 30-48, see page 5 last paragraph to page 8 line 4 of the WO '408. Moreover, it is disclosed in WO '408 that *"Denier per filament, cut length, ... softening point, melt point, dye affinity, and other properties are crucial to achieving ideal properties in the final product. ... optimum results from the finished carpet product. This will depend on numerous factors including the denier, length crimp, finish and other properties of the base fiber product."* (page 5 lines 25-31). In other words, the recited limitations in these claims are taken to be result effective variables, routinely optimized by experimentation, to obtain desired characteristics to a finished carpet. Note that, claims 44-47 read on using 0 wt% of binder fibers. Therefore, absent any showing unexpected result, the limitations in these claims would have been obvious in the art.

5. Claim 29-36 and 43-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2300340 A in view of WO 99/14408 A1.

JP '340 discloses a process of making a cut-pile carpet, the process comprises providing a core conjugated strand having an untwisted polyester sliver (1) and filament yarn (2) arranged in parallel to each other; wrapping a filament yarn (3)

around the conjugated strand to form a twist-free "trispinning yarn" (6); tufting the yarn into a carpet backing to form a loop-pile carpet (figure 3); and, cutting the loop (figures 1-2 and 4; abstract).

JP '340 does not teach: a) forming a wrapper yarn comprising a blend of heat-activated binder fibers and base synthetic fibers, the melting point of binder fibers is at least 20 °C lower than the melting point of the base fibers; b) heat-setting a resultant wrapped yarn; and, c) dyeing and finishing a resultant carpet. However, it would have been obvious in the art to replace a wrapping filament yarn suggested by JP '340 with a wrapper yarn comprising a blend of heat-activated binder fibers and base synthetic fibers, because WO '408 teaches the desirability of forming a wrapper yarn comprising a heat-activated binder fibers or a blend of heat-activated binder fibers and base synthetic fibers for making singles yarns (page 12-22; examples 3-4). As for the recited melting point and heat-setting step, see example 1 on page 6 of the WO '408 patent for the melting temperature range for base fibers and binder fibers and claim 16 of the WO '408 patent for the heat-setting step. As for the recited dyeing and finishing step, see page 4 lines 19-21 and page 6 12-14 of the WO '408 patent.

With respect to claims 30-36 and 43-48, see page 5 last paragraph to page 8 line 4 of the WO '408. Moreover, it is disclosed in WO '408 that "Denier per filament, cut length, ... softening point, melt point, dye affinity, and other properties are crucial to achieving ideal properties in the final product. ... optimum results from the finished carpet product. This will depend on numerous factors including the

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denier, length crimp, finish and other properties of the base fiber product.”. (page 5 lines 25-31). In other words, the recited limitations in these claims are taken to be result effective variables, routinely optimized by experimentation, to obtain a desired characteristic of a finished carpet. Note that, claims 44-47 read on using 0 wt% of binder fibers. Therefore, absent any showing unexpected result, the limitations in these claims would have been obvious in the art.

### ***Response to Arguments***

6. Applicant's arguments filed on 05-31-05 have been fully considered but they are not persuasive.

On page 6 1<sup>st</sup> full paragraph, Counsel argues that, WO '408 is directed to forming twist-set yarn, claim 29 is directed solely to “untwisted wrapped singles yarns that are not twist set” (emphasis in original). Examiner does not fully agree with Counsel's assertion. While it is desired in WO '408 to form a twist-set yarn, it is quite clear from claims 1 and 14-16 that, it is not necessary to twist-set yarns in forming carpet face yarn. In fact, none of the product claims requires forming a twist set yarn. Note further that, none of the recited claims except for dependent claim 17 requires twist setting. If twist-setting is necessary in a process of WO '408, then why is it not positively recited in independent claim 1 and 16.

As for Counsel's arguments on page 7 regarding Scott and Perrig, in order to simplify the issue, these patents are withdrawn.

On page 8 full paragraph 2 to page 9, Counsel argues that, “... one of ordinary skill in the art would not look to combine JP 2300340 with WO 99/14408 to arrive

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at the present invention.”. Examiner disagrees. First of all, as noted above, the teachings of WO ‘408 as a whole would have reasonably suggested to one in the art that, although not preferred, a carpet face yarn can effectively be manufactured from untwisted/unplied heat-set yarn of WO ‘408. JP ‘340 is merely cited to show that it is old in the art to form a carpet face yarn from untwisted/unplied yarn. As noted earlier, a preference on whether to use plied heat-set singles yarn or heat-set singles yarn is taken to be well within the purview of choice in the art, absent any showing of unexpected result. The teachings of WO ‘408 and JP ‘340 taken together would have reasonably suggested to one in the art that untwist heat-set yarn of WO ‘408 is an effective alternative to twisted heat-yarn in forming a carpet face yarn. As for Counsel’s argument that, “JP 2300340 does not teach or suggest the heat setting of their multiple individual fibers into a singles yarn”. Examiner agrees. That’s precisely the reason why claim 29 is not rejected as being anticipated by JP ‘340. It is respectfully submitted that, Counsel is resorting to a classic piece-meal analysis of applied references. It is respectfully submitted that, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

On page 10 last paragraph 10 to page 11, Counsel argues that “... nothing in the combination ... would teach or suggest the claimed invention as a whole to one



skilled in the art, particularly with a reasonable expectation of success.”.

Examiner strongly disagrees. A filament yarn (3) suggested by JP '340 is used to mechanically bind a sliver (1) and filament yarn (2) together to form a conjugate yarn for use as a tufted carpet face yarn. One in the art reading the collective teachings of JP '340 and WO '408 would have been motivated to replace a filament binding yarn suggested by JP '340 with a binding wrapper yarn taught by WO '408 so that the sliver (1) and filament yarn (2) are not only mechanically bound together, but also chemically (adhesively).

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (571) 272-1224. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam Chuan C. Yao  
Primary Examiner  
Art Unit 1733

Scy  
07-25-05